

DEPARTMENT of ENVIRONMENTAL SERVICES
Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: SUNCOOK POND, UPPER	Lake Area (ha): 140.26
Town: BARNSTEAD	Maximum depth (m): 13.1
County: Belknap	Mean depth (m): 5.6
River Basin: Merrimack	Volume (m ³): 7895000
Latitude: 43°23'19" N	Relative depth: 1.0
Longitude: 71°17'10" W	Shore configuration: 1.52
Elevation (ft): 551	Areal water load (m/yr): 42.28
Shore length (m): 6400	Flushing rate (yr ⁻¹): 7.50
Watershed area (ha): 12975.8	P retention coeff.: 0.38
% watershed ponded: 3.3	Lake type: natural w/dam

BIOLOGICAL:

11 January 1993

1 July 1992

DOM. PHYTOPLANKTON (% TOTAL)	#1	ASTERIONELLA 45%	SPHAEROCYSTIS 40%
	#2	DINOBRYON 25%	MALLOMONAS 35%
	#3	MELOSIRA 15%	
PHYTOPLANKTON ABUNDANCE (cells/mL)			745
CHLOROPHYLL-A (µg/L)			2.37
DOM. ZOOPLANKTON (% TOTAL)	#1	SYNCHAETA 71%	VORTICELLA 77%
	#2	KERATELLA 26%	NAUPLIUS LARVA 9%
	#3		CALANOID COPEPODS 6%
ROTIFERS/LITER		30	20
MICROCRUSTACEA/LITER		1	70
ZOOPLANKTON ABUNDANCE (#/L)		31	379
VASCULAR PLANT ABUNDANCE			Scattered
SECCHI DISK TRANSPARENCY (m)			3.6
BOTTOM DISSOLVED OXYGEN (mg/L)		8.6	2.9
BACTERIA (E. coli, #/100 ml)	#1		< 1
	#2		< 1
	#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 5.6
Hypolimnion volume (m³) : 1313000
Anoxic volume (m³) : None

CHEMICAL:

Lake: SUNCOOK POND, UPPER
Town: BARNSTEAD

	11 January 1993		1 July 1992		
DEPTH (m)	3.5	7.0	1.5	5.0	10.0
pH (units)	6.4	6.4	6.7	6.4	6.1
A.N.C. (Alkalinity)	4.1	5.0	4.4	4.1	5.0
NITRATE NITROGEN	0.05	0.07	< 0.02		0.10
TOTAL KJELDAHL NITROGEN	0.25	0.37	0.30	0.24	0.22
TOTAL PHOSPHORUS	0.010	0.010	0.015	0.009	0.010
CONDUCTIVITY (μ mhos/cm)	44.1	44.4	41.0	41.9	44.3
APPARENT COLOR (cpu)	48	60	28	29	29
MAGNESIUM			0.59		
CALCIUM			2.3		
SODIUM			3.9		
POTASSIUM			< 0.40		
CHLORIDE	6	6	5		5
SULFATE	5	5	4		4
TN : TP	30	44	20		32
CALCITE SATURATION INDEX			3.6		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1992

D.O. S.D. PLANT CHL TOTAL CLASS

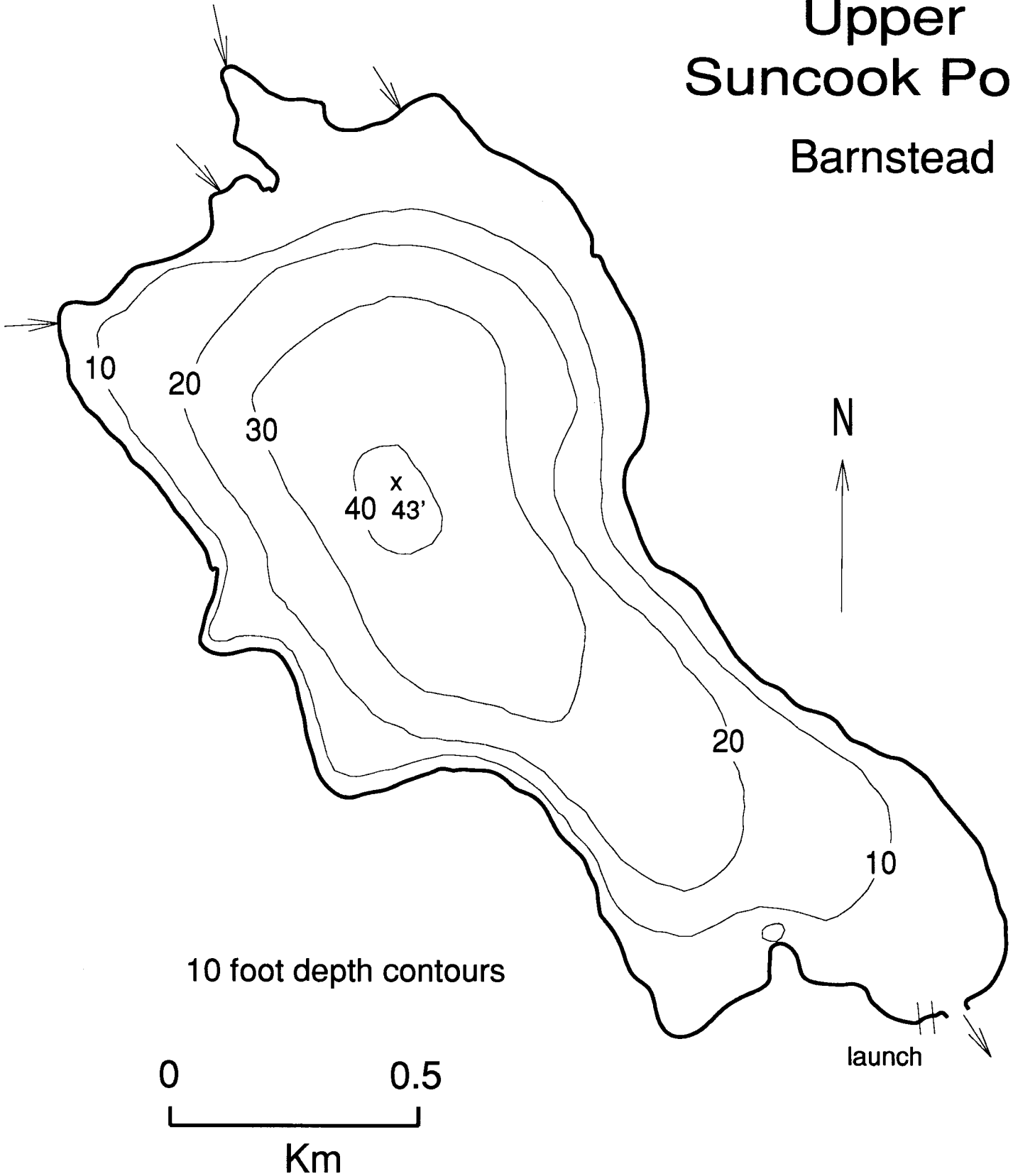
2	2	1	0	5	Oligo.
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COMMENTS:

1. Eastern shore was mostly developed and had a rocky shoreline; the western shoreline was mostly undeveloped.
2. A juvenile camp with a beach was located at the northern end.
3. This pond was previously surveyed and classified in 1979. It was rated mesotrophic in 1979, and the change was because of less bottom dissolved oxygen in 1979. The lesser amount of oxygen in 1979 was probably because the sampling date was later in the summer. There was little change in other water quality parameters.
4. Chroomonas (50%) dominated the wholewater phytoplankton.

Upper Suncook Pond

Barnstead



FIELD DATA SHEET

LAKE: SUNCOOK POND, UPPER	TOWN: BARNSTEAD
DATE: 07/01/92	WEATHER: MOSTLY SUNNY, WINDY, 82 F.

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[illegible]

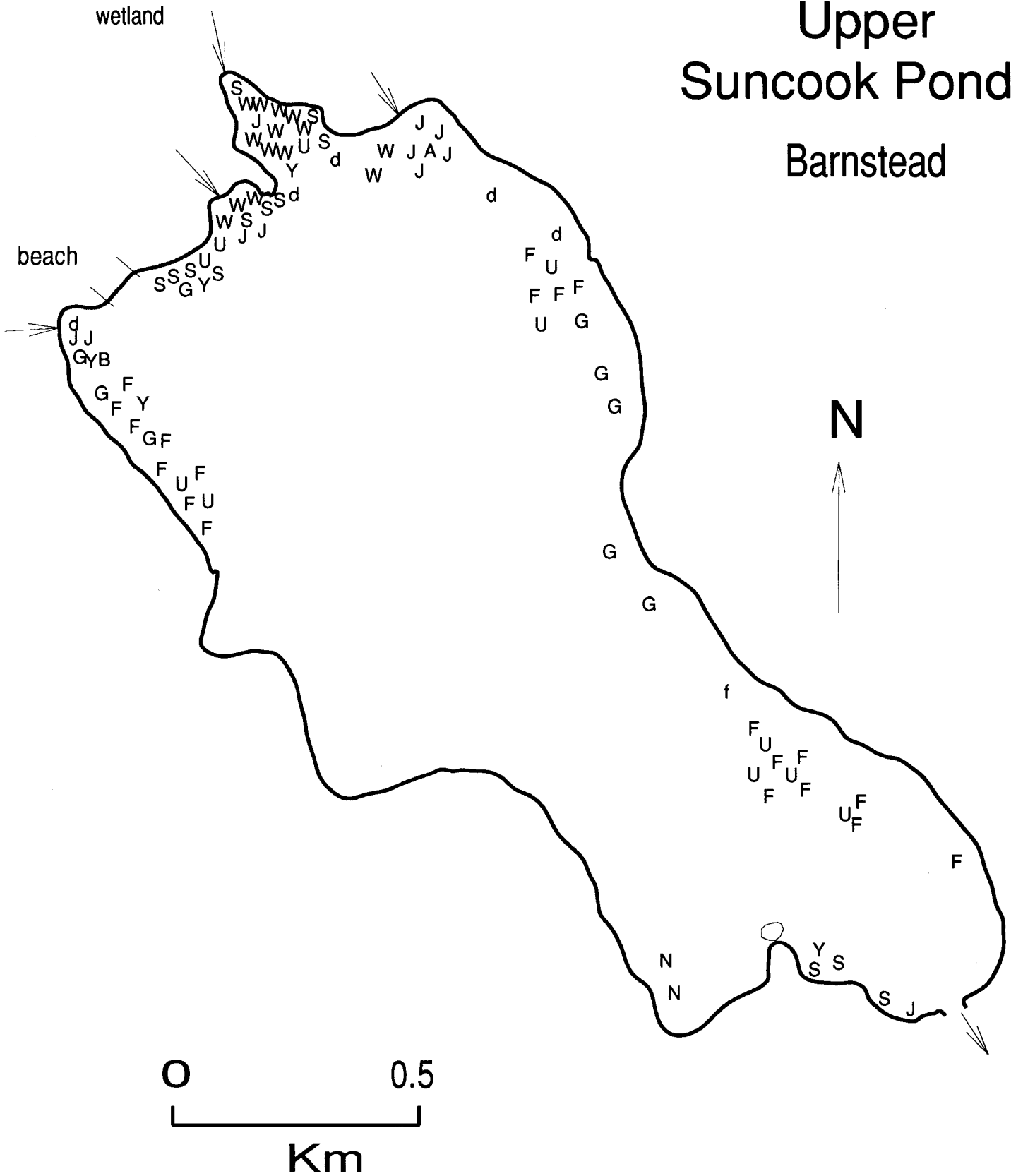
SECCHI DISK (m):	3.6	COMMENTS:
BOTTOM DEPTH (m):	12.8	
TIME:	1215	
*Dissolved oxygen values are in mg/L		

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Upper Suncook Pond

Barnstead



AQUATIC PLANT SURVEY

LAKE: SUNCOOK POND, UPPER	TOWN: BARNSTEAD	DATE: 07/01/92
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TOWN: BARNSTEAD

DATE: 07/01/92

[illegible]

OVERALL ABUNDANCE: Scattered

GENERAL OBSERVATIONS:

1. Plants were common in the northern end and sparse in the southern end, for an overall rating of scattered.
2. Wetlands surrounded the inlets at the northern end, and the dominant plants in the lake in this end were pondweeds, rushes and bur reeds.